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SEQUENCE LISTING

<110> Gijzen, Mark
<120> Soybean Seed Coat Peroxidase Structural Gene And Regulatory Region

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 <212> DNA
 <213> Medicago sativa

<400> 13	
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cattgttagc	aatgtcttaa caaacgtttc taagacagat cctcgcatgc ttgctagtct 180
cgtcaggctt	cactttcatg actgttttgt tctgggatgt gatgcctcag ttttgctgaa 240
caatactgct	acaatcgtaa gcgaacaaca agcttttcca aataacaact ctctaagggg 300
tttggatggt	gtgaatcaga tcaaaactgc tgtagaaagt gcttgtccta acacagtttc 360
ttgtgctgat	attcttgcac ttgctcaagc atcctctggt ctggcacaag gtccctagttg 420
gacggttcct	ttaggaagaa gggatggttt aaccgcaaac cgaacacttg caaatcaaaa 480
tcttccggct	ccattcaatt ccttggatca ccttaaactg catttgactg ctcaaggcct 540
cattactcct	gttctagttg cctctcggg tgcctatata tttggaagag ctcatcgcc 600
acaatttggt	agtcgattgt acaacttcag cagtactgga agtcccgatc caactcttaa 660
cacaacttac	ttacaacaac tgcgcacaat atgtcccaat ggtggacctg gcacaaacct 720
taccaatttc	gatccaacga ctccctgataa atttgacaag aactattact ccaatcttca 780
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tgcaatgatt	aaaatgggca atattggtgt gctaacaggg acaaaaggag agattagaaa 960
acaatgcaac	tttgtgaact caaattctgc agaactagat ttagccacca tagcatccat 1020
agtagaatca	ttagaggatg gaattgctag tgtaatataa ataaattagc gaaaatgcac 1080
ttattgaaat	cttgtgacta gatcccacta ataaataagt tataactagg cacatttcat 1140
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 <213> Medicago sativa

<400> 14
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 ttcaatcgta cgtgggtgtgc tcacaaatgt ttcacaatct gatcccagaa tgcttggttag 180
 tctcatcagg ctacattttc atgactgttt tgttcaagggt tgcgatgcct cgatttttgc 240
 gaacgatacg gctacaatag tgagcgagca aagtgcacca ccaaataaca actccataag 300
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 tacttggcaa gttccattag gaagaaggga tagtttgaca gcaaataatt cccttgcagc 480
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 atgcagatgt ttcggttgatc gattatacaa tttcagcaac actggaaacc ccgattcaac 660
 tcttaacacg acctatttac aaacattgca agcaatatgt cccaatgggtg gacctggtac 720
 aaacctaacc gatttggacc caaccacacc agatacattt gactccaact actactccaa 780
 tctccaaggt ggaaagggtc tgtttcagag tgaccaagag cttttttcca gaaatgggtc 840
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 tgtagcctca atgataaaaa tgggtaatat tggagtttta actggatctc aagggtgaaat 960
 tagaacacag tgtaatgctg tgaatgggaa ttcttctgga ttggctactg tagtcaccaa 1020
 agaatcatca gaagatggaa tggctagctc attctaaata taagcttgga aaatattgaa 1080
 gaggttctat aattttgtgc atacatatat ggtatgtgca tgtgggtgtat tatgtttttg 1140
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<210> 15
 <211> 283
 <212> PRT
 <213> Glycine max

<400> 15
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 Asn Thr Asp Thr Ile Glu Ser Glu Gln Asp Ala Leu Pro Asn Ile Asn
 20 25 30
 Ser Ile Arg Gly Leu Asp Val Val Asn Asp Ile Lys Thr Ala Val Glu
 35 40 45
 Asn Ser Cys Pro Asp Thr Val Ser Cys Ala Asp Ile Leu Ala Ile Ala
 50 55 60

Ala	Glu	Ile	Ala	Ser	Val	Ala	Gly	Arg	Arg	Ser	Gly	Trp	Pro	Val	Pro	65	70	75	80
Leu	Gly	Arg	Arg	Asp	Ser	Leu	Thr	Ala	Asn	Arg	Thr	Leu	Ala	Asn	Gln		85	90	95
Asn	Leu	Pro	Ala	Pro	Phe	Phe	Asn	Leu	Thr	Gln	Leu	Lys	Ala	Ser	Phe		100	105	110
Ala	Val	Gln	Gly	Leu	Asn	Thr	Leu	Asp	Leu	Val	Thr	Leu	Ser	Gly	Gly		115	120	125
His	Thr	Ser	Gly	Arg	Ala	Arg	Cys	Ser	Thr	Phe	Ile	Asn	Arg	Leu	Tyr		130	135	140
Asn	Phe	Ser	Asn	Thr	Gly	Leu	Ile	His	Leu	Asp	Thr	Thr	Tyr	Leu	Glu		145	150	155
Val	Leu	Arg	Ala	Arg	Cys	Pro	Gln	Asn	Ala	Thr	Gly	Asp	Asn	Leu	Thr		165	170	175
Asn	Leu	Asp	Leu	Ser	Thr	Pro	Asp	Gln	Phe	Asp	Asn	Arg	Tyr	Tyr	Ser		180	185	190
Asn	Leu	Leu	Gln	Leu	Asn	Gly	Leu	Leu	Gln	Ser	Asp	Gln	Glu	Arg	Phe		195	200	205
Ser	Thr	Pro	Gly	Ala	Asp	Thr	Ile	Pro	Leu	Ser	Ile	Ala	Ser	Ala	Asn		210	215	220
Gln	Asn	Thr	Phe	Phe	Ser	Asn	Phe	Arg	Val	Ser	Met	Ile	Lys	Met	Gly		225	230	235
Asn	Ile	Gly	Val	Leu	Thr	Gly	Asp	Glu	Gly	Glu	Ile	Arg	Leu	Gln	Cys		245	250	255
Asn	Phe	Val	Asn	Gly	Asp	Ser	Phe	Gly	Leu	Ala	Ser	Val	Ala	Ser	Lys		260	265	270
Asp	Ala	Lys	Gln	Lys	Leu	Val	Ala	Gln	Ser	Lys							275	280	

<210> 16
 <211> 355
 <212> PRT
 <213> Medicago sativa

<400> 16

Met	Asn	Ser	Leu	Arg	Ala	Val	Ala	Ile	Ala	Leu	Cys	Cys	Ile	Val	Val	1	5	10	15
Val	Leu	Gly	Gly	Leu	Pro	Phe	Ser	Ser	Asn	Ala	Gln	Leu	Asp	Pro	Ser		20	25	30
Phe	Tyr	Arg	Asn	Thr	Cys	Pro	Asn	Val	Ser	Ser	Ile	Val	Arg	Glu	Val		35	40	45
Ile	Arg	Ser	Val	Ser	Lys	Lys	Asp	Pro	Arg	Met	Leu	Ala	Ser	Leu	Val		50	55	60
Arg	Leu	His	Phe	His	Asp	Cys	Phe	Val	Gln	Gly	Cys	Asp	Ala	Ser	Val		65	70	75
Leu	Leu	Asn	Lys	Thr	Asp	Thr	Val	Val	Ser	Glu	Gln	Asp	Ala	Phe	Pro		85	90	95

Asn	Arg	Asn	Ser	Leu	Arg	Gly	Leu	Asp	Val	Val	Asn	Gln	Ile	Lys	Thr
			100					105					110		
Ala	Val	Glu	Lys	Ala	Cys	Pro	Asn	Thr	Val	Ser	Cys	Ala	Asp	Ile	Leu
		115					120					125			
Ala	Leu	Ser	Ala	Glu	Leu	Ser	Ser	Thr	Leu	Ala	Asp	Gly	Pro	Asp	Trp
	130					135					140				
Lys	Val	Pro	Leu	Gly	Arg	Arg	Asp	Gly	Leu	Thr	Ala	Asn	Gln	Leu	Leu
145					150					155					160
Ala	Asn	Gln	Asn	Leu	Pro	Ala	Pro	Phe	Asn	Thr	Thr	Asp	Gln	Leu	Lys
				165					170					175	
Ala	Ala	Phe	Ala	Ala	Gln	Gly	Leu	Asp	Thr	Thr	Asp	Leu	Val	Ala	Leu
			180					185					190		
Ser	Gly	Ala	His	Thr	Phe	Gly	Arg	Ala	His	Cys	Ser	Leu	Phe	Val	Ser
		195					200					205			
Arg	Leu	Tyr	Asn	Phe	Ser	Gly	Thr	Gly	Ser	Pro	Asp	Pro	Thr	Leu	Asn
	210					215					220				
Thr	Thr	Tyr	Leu	Gln	Gln	Leu	Arg	Thr	Ile	Cys	Pro	Asn	Gly	Gly	Pro
225					230					235					240
Gly	Thr	Asn	Leu	Thr	Asn	Phe	Asp	Pro	Thr	Thr	Pro	Asp	Lys	Phe	Asp
				245					250					255	
Lys	Asn	Tyr	Tyr	Ser	Asn	Leu	Gln	Val	Lys	Lys	Gly	Leu	Leu	Gln	Ser
			260					265					270		
Asp	Gln	Glu	Leu	Phe	Ser	Thr	Ser	Gly	Ser	Asp	Thr	Ile	Ser	Ile	Val
		275					280					285			
Asn	Lys	Phe	Ala	Thr	Asp	Gln	Lys	Ala	Phe	Phe	Glu	Ser	Phe	Arg	Ala
	290					295					300				
Ala	Met	Ile	Lys	Met	Gly	Asn	Ile	Gly	Val	Leu	Thr	Gly	Asn	Gln	Gly
305					310					315					320
Glu	Ile	Arg	Lys	Gln	Cys	Asn	Phe	Val	Asn	Ser	Lys	Ser	Ala	Glu	Leu
				325					330					335	
Gly	Leu	Ile	Asn	Val	Ala	Ser	Ala	Asp	Ser	Ser	Glu	Glu	Gly	Met	Val
			340					345					350		
Ser	Ser	Met													
		355													
<210>	17														
<211>	358														
<212>	PRT														
<213>	Medicago sativa														
<400>	17														
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Leu	Gly	Gly	Leu	Pro	Phe	Ser	Ser	Asp	Ala	Gln	Leu	Ser	Pro	Thr	Phe
			20					25					30		
Tyr	Ser	Lys	Thr	Cys	Pro	Thr	Val	Ser	Ser	Ile	Val	Ser	Asn	Val	Leu
		35					40					45			

Thr	Asn	Val	Ser	Lys	Thr	Asp	Pro	Arg	Met	Leu	Ala	Ser	Leu	Val	Arg
50						55					60				
Leu	His	Phe	His	Asp	Cys	Phe	Val	Leu	Gly	Cys	Asp	Ala	Ser	Val	Leu
65					70					75					80
Leu	Asn	Asn	Thr	Ala	Thr	Ile	Val	Ser	Glu	Gln	Gln	Ala	Phe	Pro	Asn
				85					90					95	
Asn	Asn	Ser	Leu	Arg	Gly	Leu	Asp	Val	Val	Asn	Gln	Ile	Lys	Leu	Ala
			100					105					110		
Val	Glu	Val	Pro	Cys	Pro	Asn	Thr	Val	Ser	Cys	Ala	Asp	Ile	Leu	Ala
		115					120					125			
Leu	Ala	Ala	Gln	Ala	Ser	Ser	Val	Leu	Ala	Gln	Gly	Pro	Ser	Trp	Thr
	130						135				140				
Val	Pro	Leu	Gly	Arg	Arg	Asp	Gly	Leu	Thr	Ala	Asn	Arg	Thr	Leu	Ala
145					150					155					160
Asn	Gln	Asn	Leu	Pro	Ala	Pro	Phe	Asn	Ser	Leu	Asp	Gln	Leu	Lys	Ala
				165					170					175	
Ala	Phe	Thr	Ala	Gln	Gly	Leu	Asn	Thr	Thr	Asp	Leu	Val	Ala	Leu	Ser
			180					185					190		
Gly	Ala	His	Thr	Phe	Gly	Arg	Ala	His	Cys	Ala	Gln	Phe	Val	Ser	Arg
		195					200					205			
Leu	Tyr	Asn	Phe	Ser	Ser	Thr	Gly	Ser	Pro	Asp	Pro	Thr	Leu	Asn	Thr
	210					215					220				
Thr	Tyr	Leu	Gln	Gln	Leu	Arg	Thr	Ile	Cys	Pro	Asn	Gly	Gly	Pro	Gly
225					230					235					240
Thr	Asn	Leu	Thr	Asn	Phe	Asp	Pro	Thr	Thr	Pro	Asp	Lys	Phe	Asp	Lys
				245					250					255	
Asn	Tyr	Tyr	Ser	Asn	Leu	Gln	Val	Lys	Lys	Gly	Leu	Leu	Gln	Ser	Asp
			260					265					270		
Gln	Glu	Leu	Phe	Ser	Thr	Ser	Gly	Ala	Asp	Thr	Ile	Ser	Ile	Val	Asn
		275					280					285			
Lys	Phe	Ser	Thr	Asp	Gln	Asn	Ala	Phe	Phe	Glu	Ser	Phe	Lys	Ala	Ala
	290					295					300				
Met	Ile	Lys	Met	Gly	Asn	Ile	Gly	Val	Leu	Thr	Gly	Thr	Lys	Gly	Glu
305					310					315					320
Ile	Arg	Lys	Gln	Cys	Asn	Phe	Val	Asn	Phe	Val	Asn	Ser	Asn	Ser	Ala
				325					330					335	
Glu	Leu	Asp	Leu	Ala	Thr	Ile	Ala	Ser	Ile	Val	Glu	Ser	Leu	Glu	Asp
			340					345					350		
Gly	Ile	Ala	Ser	Val	Ile										
				355											

<210> 18
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 <212> PRT
 <213> Medicago sativa

<400> 18

Met	Trp	Cys	Val	Val	Leu	Leu	Val	Val	Leu	Gly	Gly	Leu	Pro	Phe	Ser	
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Ser	Asp	Ala	Gln	Leu	Ser	Pro	Thr	Phe	Tyr	Ser	Lys	Thr	Cys	Pro	Thr	
			20					25					30			
Val	Ser	Ser	Ile	Val	Ser	Asn	Val	Leu	Thr	Asn	Val	Ser	Lys	Thr	Asp	
		35					40					45				
Pro	Arg	Met	Leu	Ala	Ser	Leu	Val	Arg	Leu	His	Phe	His	Asp	Cys	Phe	
	50					55					60					
Val	Leu	Gly	Cys	Asp	Ala	Ser	Val	Leu	Leu	Asn	Asn	Thr	Ala	Thr	Ile	
65					70					75					80	
Val	Ser	Glu	Gln	Gln	Ala	Phe	Pro	Asn	Asn	Asn	Ser	Leu	Arg	Gly	Leu	
				85					90					95		
Asp	Val	Val	Asn	Gln	Ile	Lys	Thr	Ala	Val	Glu	Ser	Ala	Cys	Pro	Asn	
			100					105					110			
Thr	Val	Ser	Cys	Ala	Asp	Ile	Leu	Ala	Leu	Ala	Gln	Ala	Ser	Ser	Val	
		115					120					125				
Leu	Ala	Gln	Gly	Pro	Ser	Trp	Thr	Val	Pro	Leu	Gly	Arg	Arg	Asp	Gly	
	130					135					140					
Leu	Thr	Ala	Asn	Arg	Thr	Leu	Ala	Asn	Gln	Asn	Leu	Pro	Ala	Pro	Phe	
145					150					155					160	
Asn	Ser	Leu	Asp	His	Leu	Lys	Leu	His	Leu	Thr	Ala	Gln	Gly	Leu	Ile	
				165					170					175		
Thr	Pro	Val	Leu	Val	Ala	Leu	Ser	Gly	Ala	His	Thr	Phe	Gly	Arg	Ala	
			180					185					190			
His	Cys	Ala	Gln	Phe	Val	Ser	Arg	Leu	Tyr	Asn	Phe	Ser	Ser	Thr	Gly	
		195					200					205				
Ser	Pro	Asp	Pro	Thr	Leu	Asn	Thr	Thr	Tyr	Leu	Gln	Gln	Leu	Arg	Thr	
	210					215					220					
Ile	Cys	Pro	Asn	Gly	Gly	Pro	Gly	Thr	Asn	Leu	Thr	Asn	Phe	Asp	Pro	
225					230					235					240	
Thr	Thr	Pro	Asp	Lys	Phe	Asp	Lys	Asn	Tyr	Tyr	Ser	Asn	Leu	Gln	Val	
				245					250					255		
Lys	Lys	Gly	Leu	Leu	Gln	Ser	Asp	Gln	Glu	Leu	Phe	Ser	Thr	Ser	Gly	
			260					265					270			
Ala	Asp	Thr	Ile	Ser	Ile	Val	Asp	Lys	Phe	Ser	Thr	Asp	Gln	Asn	Ala	
		275					280					285				
Phe	Phe	Glu	Ser	Phe	Lys	Ala	Ala	Met	Ile	Lys	Met	Gly	Asn	Ile	Gly	
	290					295					300					
Val	Leu	Thr	Gly	Thr	Lys	Gly	Glu	Ile	Arg	Lys	Gln	Cys	Asn	Phe	Val	
305					310					315					320	
Asn	Ser	Asn	Ser	Ala	Glu	Leu	Asp	Leu	Ala	Thr	Ile	Ala	Ser	Ile	Val	
				325					330					335		

Glu Ser Leu Glu Asp Gly Ile Ala Ser Val Ile
 340 345

<210> 19
 <211> 351
 <212> PRT
 <213> Medicago sativa

<400> 19

Met Leu Gly Leu Ser Ala Thr Ala Phe Cys Cys Met Val Phe Val Leu
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Ile Gly Gly Val Pro Phe Ser Asn Ala Gln Leu Asp Pro Ser Phe Tyr
 20 25 30

Asn Ser Thr Cys Ser Asn Leu Asp Ser Ile Val Arg Gly Val Leu Thr
 35 40 45

Asn Val Ser Gln Ser Asp Pro Arg Met Leu Gly Ser Leu Ile Arg Leu
 50 55 60

His Phe His Asp Cys Phe Val Gln Gly Cys Asp Ala Ser Ile Leu Leu
 65 70 75 80

Asn Asp Thr Ala Thr Ile Val Ser Glu Gln Ser Ala Pro Pro Asn Asn
 85 90 95

Asn Ser Ile Arg Gly Leu Asp Val Ile Asn Gln Ile Lys Thr Ala Val
 100 105 110

Glu Asn Ala Cys Pro Asn Thr Val Ser Cys Ala Asp Ile Leu Ala Leu
 115 120 125

Ser Ala Glu Ile Ser Ser Asp Leu Ala Asn Gly Pro Thr Trp Gln Val
 130 135 140

Pro Leu Gly Arg Arg Asp Ser Leu Thr Ala Asn Asn Ser Leu Ala Ala
 145 150 155 160

Gln Asn Leu Pro Ala Pro Thr Phe Asn Leu Thr Arg Leu Lys Ser Asn
 165 170 175

Phe Asp Asn Gln Asn Leu Ser Thr Thr Asp Leu Val Ala Leu Ser Gly
 180 185 190

Gly His Thr Ile Gly Arg Gly Gln Cys Arg Phe Phe Val Asp Arg Leu
 195 200 205

Tyr Asn Phe Ser Asn Thr Gly Asn Pro Asp Ser Thr Leu Asn Thr Thr
 210 215 220

Tyr Leu Gln Thr Leu Gln Ala Ile Cys Pro Asn Gly Gly Pro Gly Thr
 225 230 235 240

Asn Leu Thr Asp Leu Asp Pro Thr Thr Pro Asp Thr Phe Asp Ser Asn
 245 250 255

Tyr Tyr Ser Asn Leu Gln Val Gly Lys Gly Leu Phe Gln Ser Asp Gln
 260 265 270

Glu Leu Phe Ser Arg Asn Gly Ser Asp Thr Ile Ser Ile Val Asn Ser
 275 280 285

Phe Ala Asn Asn Gln Thr Leu Phe Phe Glu Asn Phe Val Ala Ser Met
 290 295 300

Ile Lys Met Gly Asn Ile Gly Val Leu Thr Gly Ser Gln Gly Glu Ile
305 310 315 320

Arg Thr Gln Cys Asn Ala Val Asn Gly Asn Ser Ser Gly Leu Ala Thr
325 330 335

Val Val Thr Lys Glu Ser Ser Glu Asp Gly Met Ala Ser Ser Phe
340 345 350